Remarks

Reconsideration and reversal of the rejections expressed in the Office Action of March 16, 2005 are respectfully contended in view of the following remarks and the application as amended. The present invention relates to an organic waste material treatment process for organic waste material received in a vessel. By this Amendment and Response, the previously pending claims have been cancelled, and new claims 63-74 added, in order to more particularly point out and distinctly claim the subject matter of the present invention.

Claims 1, 6, 13 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cotton, U.S. Pat. No. 4,565,552, in view of McCann, U.S. Pat. No. 5,447,850 and Sherman, U.S. Pat. No. 2,337,686. The Office Action states, inter alia, that claim 1 differs from Cotton by reciting that oxygen is depleted in the vessel to create conditions suitable for anaerobic digestion of the contents, with McCann disclosing sealing the vessel with respect to air, and allowing the oxygen to be consumed, and optionally, the use of a purge gas. The Office Action further states that it would have been obvious to deplete the vessel (in the primary reference) of oxygen, as suggested by McCann, for the known and expected result of reducing the risk of an explosion.

As has been previously stated, Cotton describes its vessel as being made of concrete, metal or other impermeable and pressure-resistant material. Applicant respectfully contends that it cannot be inferred that the reference vessel is pressurized or able to operate and maintain an internal air pressure above atmospheric air pressure. Rather, the vessel described in Cotton is merely constructed to be water tight. Indeed, at column 5, lines 57 to 68 of the reference, it is described that under certain operating conditions gas may escape into the atmosphere by passing under flanges 7 of lid 6 of the vessel. Thus, Applicant submits that Cotton provides no anticipation for an air-tight pressurized vessel in which the sequential anaerobic digestion and aerobic composting process for treatment of organic waste material of the present invention can be operated.

McCann relates to a method of producing methane from organic waste, which includes the following steps: The waste is first shredded, and is inoculated with aerobic microorganisms, fermented with the aerobic microorganisms, then inoculated with anaerobic microorganisms. The waste inoculated with anaerobic microorganisms is placed in an oxygen free environment, and methane is then evolved from the waste. Relative to McCann, please note that at column 3,

lines 33-37, it is stated that: *"Removal of oxygen in order to reduce the risk of an explosion is accomplished by feeding natural gas into the container and purging the gases therein through an umbilical hose 48 leading to a manometer 50..."* In contrast, in the present invention the vessel is sealed and the oxygen content thereof is depleted thereof by the action of aerobic bacteria, without the need for purging by any gas, as disclosed and presently claimed. The use of natural gas is also noted at column 4, lines 59-60 of McCann: *"However, to reduce the risk of explosion the container is purged with natural gas..."* McCann acknowledges that there is a risk of explosion in the absence of a purging step by natural gas or nitrogen. Thus, when the container in McCann is flooded, a substantial amount of oxygen is necessarily present. This problem and attendant explosion risk is avoided in the present invention by the inclusion of step (b) in claim 1.

The first step of the process in the Sherman reference is such that the temperature during the initial aerobic phase never exceeds 40°C, as noted at column 1 line 28 of the reference, with the goal of producing a low temperature aerobic phase. This requires pre-treatment, including comminution and aeration, so that the waste material or the refuse will retain sufficient air so as to enable the first aerobic phase to be affected with only slight artificial aeration, compared with what is subsequently required, as further noted at column 1, lines 33-42 of the reference. Thus, the process described in Sherman is fundamentally different from the process of the present invention.

Claims 7-9 and 17-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cotton in view of McCann and Sherman, taken further in view of Rosner, U.S. Pat. No. 3,895,916. It is noted in the Office Action that Rosner relates to a composting process conducted inside an inflatable bubble; the invention of Rosner relates to a structure which is an inexpensive plastic cover. The means described in Rosner for supplying air into the compost is identical to all conventional composting systems, i.e. pipes under the floor supplying air from blowers into the compost. Further, some air is retained under the cover to keep the roof from collapsing. There is no disclosure of depressurizing of the enclosure, as this would cause the roof to collapse.

In contrast, the process of the present invention relates to a vessel which is pressurized and depressurized at different stages of the process. Initially, air is preferably introduced into the vessel at a pressure above atmospheric pressure and therefore the vessel is pressurized.

Subsequently, once the available oxygen is consumed, the vessel is opened to release the pressurized gas.

Further, it is envisioned in Rosner that personnel will enter the inflated chamber. In contrast, in the process of the present invention it is not possible to enter the vessel during the process or work inside it. Thus, the purpose of the use of air above atmospheric pressure in the process of the present invention is to introduce oxygen into the material evenly, rather than pressurization to keep a roof from collapsing, as in Rosner. Thus, Applicant respectfully contends that it would be impractical to operate the apparatus as described in Rosner with an anaerobic fermentation phase. Therefore, prima facie obviousness is not established.

Claims 23, 28, 35 and 44 were rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of Cotton in view of McCann and Sherman, taken further in view of Deneche. This rejection is overcome based on the previous discussion.

For all of the above reasons, it is respectfully contended that the solicited claims define patentable subject matter. Reconsideration and reversal of the rejections expressed in the Office Action of March 16, 2005 are respectfully submitted. The Examiner is invited to call the undersigned if any questions arise during the course of reconsideration of this matter.

Respectfully submitted,

Date: 8/26/05

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